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BIOLOGICAL EVALUATION OF PROGENY TEST SITES ON THE COVELO AND STONYFORD RANGER DISTRICTS, MENDOCINO NATIONAL FOREST

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PSW FOREST AND RANGE EXPERIMENT STATION
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ABSTRACT

Four proposed Tree Improvement progeny test sites were examined on the Mendocino National Forest. Neither of the two sites, Bredehoft Place and Jack Hollow, on the Covelo District had any evidence of pests that require specific actions at this time to minimize impacts on the plantings. Actions may be necessary at the Bredehoft Place site to minimize damage from Armillaria root disease. Both sites, Anderson Ridge West and East, on the Stonyford District have dwarf mistletoe scattered through much of the white fir. There are also a few pockets of dwarf mistletoe and some light infections of Elytoderma deformans on ponderosa pine. Several white fir stumps in these two proposed sites have conks of Fomes annosus. Deer browsing of Douglas-fir and pocket gopher damage were observed. Actions to minimize impacts of these pests on the plantings include sanitizing a 100-foot buffer around the periphery of dwarf mistletoe-infected ponderosa pine, fencing or protecting seedlings from deer, reducing the pocket gopher population, and treating oaks to minimize damage by Armillariella mellea.

INTRODUCTION

On October 25-26, 1983 I visited four locations on the Mendocino National Forest proposed for possible use as progeny test sites by the Tree Improvement Program. Two of the sites, Bredehoft Place and Jack Hollow, are on the Covelo Ranger District. The other two sites, Anderson Ridge West and East, are on the Stonyford Ranger District. I was accompanied by Floyd Barney and Dan Young on the Covelo District and Kent Hester on the Stonyford District.

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COVELO RANGER DISTRICT

Bredehoft Place

This area presently supports a second-growth stand of sawtimber-size ponderosa pine with a few California black oak. It is a site class I - II. The stand has suffered bark beetle-related mortality for many years, but the amount appears to have decreased the last few years. Both western pine beetle (Dendroctonus brevicomis) and red turpentine beetle (D. valens) have been and continue to be active. Some of the dead trees have been salvaged, but standing dead are still present. Dense stocking and the related competition are factors predisposing trees to these attacks, as well as decreased moisture during the 1975-77 drought.

Adjoining private land was heavily logged several years ago and some regeneration is occurring naturally. A considerable quantity of grass and brush presently occupies the site.

No active pests, other than bark beetles, were observed in or around the proposed site. This includes dwarf mistletoes and root diseases. Pocket gopher mounds were not seen in the proposed site, nor in the private land. Likewise, no defoliation of ponderosa pine seedlings by grasshoppers was observed on the private land.

Planned regeneration of the site with ponderosa pine and Douglas-fir should require no actions to minimize pest activity other than those normally followed, such as proper slash treatment. It is possible that some mortality might occur near oak stumps and root systems from attack by Armillaria root disease (caused by Armillariella mellea).

Several control options are available that would minimize the possibility of root contacts between the oaks and conifers and thereby reduce the impact of Armillaria root disease. One option is to fell and kill the oaks and plant the conifer seedlings beyond the limits of the oak root systems. A second option is to fell the oaks, but allow them to sprout so that the root systems remain alive and do not become infected by A. mellea. Seedlings could then be planted within the oak root zones. The third option is to remove all oaks and their stumps and rip the major roots to expose them and break them up. Conifer seedlings could then be planted throughout the test site.

Jack Hollow

This is an alternate site for Douglas-fir outplanting. It is site class I and is occupied by a virgin stand of large sawtimber-size Douglas-fir, with small components of sugar pine, ponderosa pine, and incense-cedar. A timber sale is underway on the site.

There is no evidence of recent mortality or root disease on or around the site. No dwarf mistletoe or pocket gopher activity was observed. No special actions are necessary during harvest or site preparation and regeneration to minimize the impacts of any pests.

STONYFORD RANGER DISTRICT

Anderson Ridge East and West

These sites are similar in species, site conditions and quality, and pests and will be discussed together. Douglas-fir and ponderosa pine are the proposed test species to be planted.

The present stands contain sawtimber-size and smaller white fir, Douglas-fir, ponderosa pine, sugar pine, and scattered California black oak and incense-cedar. The site is estimated to be a site class I. Logging activity has occurred in the past.

The principal pest, white fir dwarf mistletoe (Arceuthobium abietinum f.sp. concoloris), is present in much of the white fir on the sites and the surrounding area. Western dwarf mistletoe (A. campylopodum) infects several pockets of ponderosa pine on both sites, primarily on the southern side of the sites. Conks of Fomes annosus were identified in several white fir stumps. Some of the ponderosa pines are infected by Elytroderma deformans, a needle and twig blight. Two vertebrates, deer and pocket gopher, could be a problem in any regeneration attempts. Many of the small Douglas-firs have been heavily browsed by deer. Pocket gopher mounds are evident in some areas, and it appears that some of the vegetation has been damaged by these animals. The presence of large black oaks could lead to some damage to conifer regeneration by A. mellea.

In the site where ponderosa pine is to be planted, all ponderosa pines in the areas of dwarf mistletoe infection should be removed. A 100-foot buffer beyond the periphery of the test site is sufficient to limit reinvasion. This buffer should extend around the periphery beyond the limits where dwarf mistletoe is observed to ensure complete sanitation. The amount of Elytroderma needle blight observed was low and this disease should not interfere with the objectives for the site.

Actions may need to be taken to minimize damage from pocket gophers and deer. Special fencing, poison baiting, and trapping may be necessary to reduce the population of pocket gophers. Fencing, tubing, or repellents could be used to limit deer browsing. Because of the location of these sites in a State Game Refuge, the appropriate state agencies should be contacted prior to any activities to ensure compliance with regulations and mutual agreements.

In both sites, actions to minimize the impact of Armillaria root disease may need to be taken because of the presence of the black oaks. The same actions that were discussed for the Bredehoft Place site on the Covelo District are applicable.